

What is claimed is:

1. A method for determining a location of a mobile communication device in a communication network, the method comprising:

estimating a location of the mobile communication device based on measured data representing respective distances between the mobile communication device and a plurality of reference points; and

modifying the estimated location, using a predictive filter including a forget factor which treats older measured data less significantly than newer measured data in estimating the location, to generate a modified estimated location representative of the location of the mobile communication device.

2. The method as claimed in claim 1, wherein:

the modifying step predicts movement of the mobile communication device on three axes of coordinates and uses the predictive filter to adjust the predicted movement to ascertain the modified estimated location.

3. The method as claimed in claim 2, wherein:

the modifying step predicts the movement using equations including variables representing the starting position of the mobile communication device and variables representing the moving speed of the mobile communication device, as modified by the predictive filter.

4. The method as claimed in claim 3, wherein:

the equations include three systems of equations, each system pertaining to a respective axis of movement and employing the forget factor to adjust the estimated starting position coordinate for that respective axis and speed of movement along that respective axis.

5. The method as claimed in claim 1, wherein:

the network includes a wireless ad-hoc peer-to-peer communication network, and the mobile communication device is a node in the wireless ad-hoc peer-to-peer communication network.

6. The method as claimed in claim 1, wherein:

the mobile communication device performs the estimating and modifying steps.

7. The method as claimed in claim 1, wherein:

the forget factor has a value between 0 and 1.

8. A computer readable medium of instructions for enabling a processor to determine a location of a mobile communication device in a communication network, the computer readable medium of instructions comprising:

a first set of instructions, adapted to control the processor to estimate a location of the mobile communication device based on measured data representing respective distances between the mobile communication device and a plurality of reference points; and

a second set of instructions, adapted to control the processor to modify the estimated location, using a predictive filter including a forget factor which treats older measured data less significantly than newer measured data in estimating the location, to generate a modified estimated location representative of the location of the mobile communication device.

9. The computer readable medium of instructions as claimed in claim 8, wherein:

the second set of instructions is adapted to control the processor to predict movement of the mobile communication device on three axes of coordinates and uses the predictive filter to adjust the predicted movement to ascertain the modified estimated location.

10. The computer readable medium of instructions as claimed in claim 9, wherein:

the second set of instructions is adapted to control the processor to predict the movement using equations including variables representing the starting position of the mobile

communication device and variables representing the moving speed of the mobile communication device, as modified by the predictive filter.

11. The computer readable medium of instructions as claimed in claim 10, wherein:

the equations include three systems of equations, each system pertaining to a respective axis of movement and employing the forget factor to adjust the estimated starting position coordinate for that respective axis and speed of movement along that respective axis.

12. The computer readable medium of instructions as claimed in claim 8, wherein:
the network includes a wireless ad-hoc peer-to-peer communication network, and the mobile communication device is a node in the wireless ad-hoc peer-to-peer communication network.

13. The computer readable medium of instructions as claimed in claim 8, wherein:
the processor is employed at the mobile communication device to perform the estimating and modifying operations.

14. The computer readable medium of instructions as claimed in claim 8, wherein:
the forget factor has a value between 0 and 1.

15. A system for determining a location of a mobile communication device in a communication network, the system comprising:

a processor, adapted to estimate a location of the mobile communication device based on measured data representing respective distances between the mobile communication device and a plurality of reference points, and being further adapted to modify the estimated location, using a predictive filter including a forget factor which treats older measured data less significantly than newer measured data in estimating the location, to generate a modified estimated location representative of the location of the mobile communication device.

16. The system as claimed in claim 15, wherein:

the modifying operation predicts movement of the mobile communication device on three axes of coordinates and uses the predictive filter to adjust the predicted movement to ascertain the modified estimated location.

17. The system as claimed in claim 16, wherein:

the modifying operation predicts the movement using equations including variables representing the starting position of the mobile communication device and variables representing the moving speed of the mobile communication device, as modified by the predictive filter.

18. The system as claimed in claim 17, wherein:

the equations include three systems of equations, each system pertaining to a respective axis of movement and employing the forget factor to adjust the estimated starting position coordinate for that respective axis and speed of movement along that respective axis.

19. The system as claimed in claim 15, wherein:

the network includes a wireless ad-hoc peer-to-peer communication network, and the mobile communication device is a node in the wireless ad-hoc peer-to-peer communication network.

20. The system as claimed in claim 15, wherein:

the mobile communication device includes the processor that performs the estimating and modifying operations.

21. The system as claimed in claim 15, wherein:

the forget factor has a value between 0 and 1.